



EA-6B ICAP II WEAPONS SYSTEM TRAINER, DEVICE 2F119A

FLIGHT TRAINER

TRAINING CATEGORY:

AVIATION (Operational Flight/Weapon Systems)

ORIGINATING AGENCY:

DCNO/AIR

SECURITY CLASSIFICATION:

Device 2F119A is unclassified.

PURPOSE OF DEVICE:

Device 2F119A consists of two self-contained training devices, the flight trainer and the tactics trainer. The flight trainer portion provides flight independent and integrated mission operation. The tactics trainer is devoted entirely to tactics operation.

INSTALLATION REQUIREMENTS:

Simulator Room

Floor Area 35.4' x 43.3'
 Ceiling Height 38'
 Area 1,236 Sq. Ft.

Computer Room (Flight)

Floor Area 35.4' x 36'
 Ceiling Height 12'
 Area 1,272 Sq. Ft.

Instructor Room (Flight)

Floor Area 20.8' x 18'
 Ceiling Height 9'
 Area 372'

Hydraulic Room

Floor Area 15.4' x 20'
 Ceiling Height 12'
 Area 306 Sq. Ft.

Maintenance Room

Floor 20' x 15.4'
 Ceiling Height 12'
 Area 306 Sq. Ft.

DIRECTORY OF NAVAL TRAINING DEVICES

PUBLICATIONS FURNISHED:

1. Flight Operation and Maintenance Manual - NTSC-P-4374 (U).
2. Flight Maintenance Requirements Cards - NTSC-P-4376 (U).
3. Instructors Utilization Handbook - NTSC-P-6085 (U).
4. WST Manual - NTSC-P-4386 (U).

PERSONNEL:

Instructor: Two (2) qualified instructor pilots.
Operators: Instructor or maintenance technician/operator.
Trainees: Two (2) maximum
Observers: One (1)

CONTRACT IDENTIFICATION:

Manufactured by Reflectone, Inc. (50237)
Tampa, FL 33634 under NAVTRASYS-CEN Contract No. N61339-87-C-0105.

TACTICS TRAINER

TRAINING CATEGORY:

AVIATION (Electronic Warfare)

ORIGINATING AGENCY:

DCNO/AIR

SECURITY CLASSIFICATION:

Device 2F119A is unclassified.

PURPOSE OF DEVICE:

Provides introductory, proficiency and refresher training for EA-6B ICAP II Block 86 Electronic Countermeasures Officers (ECMO).

INTENDED USE:

The EA-6B tactics trainer is a fixed-base trainer designed for installation in a permanent-type military facility. The trainer will provide training in the operation and use of the electronics warfare tactics system for ECMO 2 and ECMO 3 in normal and degraded conditions.

The flight trainer provides training for the pilot and ECMO 1 in normal, abnormal, and emergency procedures involving all phases of

flight, including takeoff and landing from carrier and land, and enroute flight of all types. It also provides training in navigation skills for the pilot and ECMO 1 when used in flight independent mode. The tactics trainer described under that trainer heading, provides training for ECMO 2 and ECMO 3 in the use of Tactical Jamming Systems and HARM when used in independent mode. When the two stations are used in integrated mode, full combat environment weapon system training is provided for all four crew members.

INTENDED USE:

The EA-6B flight trainer is a fixed-base trainer designed for installation in a permanent type military facility. The trainer will provide training in the development of pilot and ECMO/copilot skills and techniques to efficiently operate the EA-6B aircraft in a normal and full combat environment.

FUNCTIONAL DESCRIPTION:

Device 2F119A Flight Trainer simulates the operational and performance characteristics of the EA-6B aircraft on the ground and throughout the flight envelope (including inflight refueling), recreating carrier takeoff and landing effects, realistic cockpit sounds, motion, visual scenes, instrument presentations, navigation and communication reception, and feel of the flight controls. The environment for sight, sound, and feel, are accomplished through the interfacing of the computation, I/O, visual, aural cue, motion, control loading, instructor display/control, and flight systems. The instructor provides task inputs to the computation system. The computation system displays flight instrument parameters that correspond to the scenarios selected by the instructor, and coordinates the appropriate digital and analog command signals to the dynamic systems that create the visual, aural flight, and motion simulation effects. The students perform the flight and navigation training exercises, and their responses are fed back to the computation system and to the instructor for evaluation. The computation system consists of the computer/peripherals and trainer software simulation modules. The I/O interface provides all analog and digital input/output signal requirements between the computation system and the trainer hardware. The instructor display/control system provides the instructor with the means of monitoring and controlling the

DIRECTORY OF NAVAL TRAINING DEVICES

training scenario including: trainer status, problem control, student instruction, trainer mode selection, and malfunction insertion and deletion. The six-degree-of-freedom motion system provides pitch, roll lateral/longitudinal translation in any combination about the motion axes. The control loading system provides the student with realistic feel of forces applied to controls as experienced in the real-world environment. The flight systems consist of the simulated aircraft flight and aircraft mission equipment. The visual system displays, at the trainer cockpit wind-screens and IOS, realistic images of ground features, horizon, cloud deck, sky, and moving vehicles. The aural cue system generates aircraft dynamic sounds of training value in the cockpit.

PHYSICAL INFORMATION:

Device 2F119A is a permanently installed trainer. Refer to NTSC-P-4374 for descriptive details.

EQUIPMENT REQUIRED (NOT SUPPLIED):

Refer to NTSC-P-4374 for list of equipment required but not supplied.

POWER REQUIREMENTS:

Computer Room - 120/208 VAC, 60 Hz, 3-phase,
300 amps/phase 120/208
VAC, 400 Hz, 3-phase,
40 amps/phase

Utility Room - Motion HPU 230/460 VAC,
60 Hz, 3-phase, 175 amps/phase
Control Loading Pump 230/460
VAC, 60 Hz, 3-phase
7.5 amps/phase Cooling Pump
230/460 VAC, 60 Hz, 3-phase,
3.2 amps/phase Pneumatic
Compressors 230/460 VAC,
60 Hz, 3-phase

KVA (60 Hz) - 35.7KVA

KVA (400 Hz) - 2.43KVA

FUNCTIONAL DESCRIPTION:

Device 2F119A Tactics Trainer simulates the EA-6B (ICAP II) Tactics System and provides training in electronic warfare and ALQ-99 Tactical Jamming System (TJS). Simulation hardware interfaces the computer system with the trainee station and provides simulation signals to ALQ-99 components. The trainee station is an accurate reproduction of the rear cockpit of the EA-6B. All controls used with the TJS are fully operational. Training exercises employ scenarios of varying complexity. Trainees receive practical TJS experience in two modes: independent and integrated. During integrated mode, the tactics and flight portions of Device 2F119A fly a coordinated mission. Tactics instructors communicate with the flight instructors through the communications system. The instructor station includes color graphic displays of scenario conditions and a function keyboard. The instructors control the displays and trainer modes using the function keyboard. Scoring displays provide instantaneous and cumulative student performance information. Other trainer modes allow the instructor to start or freeze the scenario and initiate replays. The computer system uses a 32/9706 processor that controls the electronic warfare scenario and permits simultaneous scenario development. The computer is directed by the instructor station keyboards for scenario control and remote terminals during utility functions.

PHYSICAL INFORMATION:

Device 2F119A is a permanently installed trainer. Refer to NTSC-P-4377 for descriptive details.

OPERATIONAL EQUIPMENT:

The unmodified equipment used in the 2F119A tactical training system includes:

- Central Mission Computer (AYK-14V)
- CIU/E (ALQ-99J(V)
- Digital Display Group (ASN-123)
- Control Display Indicator
- Computer Load Panel
- KY-75 RCU
- Recorder/Reproducer Set

DIRECTORY OF NAVAL TRAINING DEVICES

POWER REQUIREMENTS:

Trainer - 120/208 VAC, 60 Hz, 3-phase,
120 amps/phase
120/208 VAC, 400 Hz, 3-phase,
10 amps/phase

Utility - 115 VAC, 60 Hz, 1-phase

INSTALLATION REQUIREMENTS:

Tactical Trainee StationInstructor Station

Floor	24' x 16'
Ceiling Height	12'
Area	384 Sq. Ft.

Tactical Computer Room

Floor	20' x 18'
Ceiling Height	12'
Area	360 Sq. Ft.

PUBLICATIONS FURNISHED:

1. Tactics Operation and Maintenance Manual -
NTSC-P-4377 (U)
2. Tactics Maintenance Requirement Cards -
NTSC-P-4379 (U)
3. Instructors Utilization Handbook -
NTSC-P-6085 (U)

PERSONNEL:

Instructors: Two (2) EA-6B ICAP II ECMOs
having Device 15E22C ex-
perience or personnel hav-
ing instructor certification
from VAQ-129.

Operators: Instructor or maintenance
technician/operator.

Trainees: Two (2) maximum

Observers: Six (6) maximum

Maintenance: Two (2) ET or equivalently
qualified technicians.

CONTRACT IDENTIFICATION:

Manufactured by AAI Corporation, Hunt
Valley, MD under NAVTRASYS-CEN Contract
No. N61339-87-C-0105.

LOCAL STOCK NUMBER:

6930-LL-C00-6931